

Appendix A

Regional Ride Quality Review

Based on IRIS 2006 International Roughness Index (IRI)

LIST OF APPENDIX EXHIBITS

Ride Quality for Expressways & Primary Arterials

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Exhibit A1: McHenry County Ride Quality for Expressways & Primary Arterials

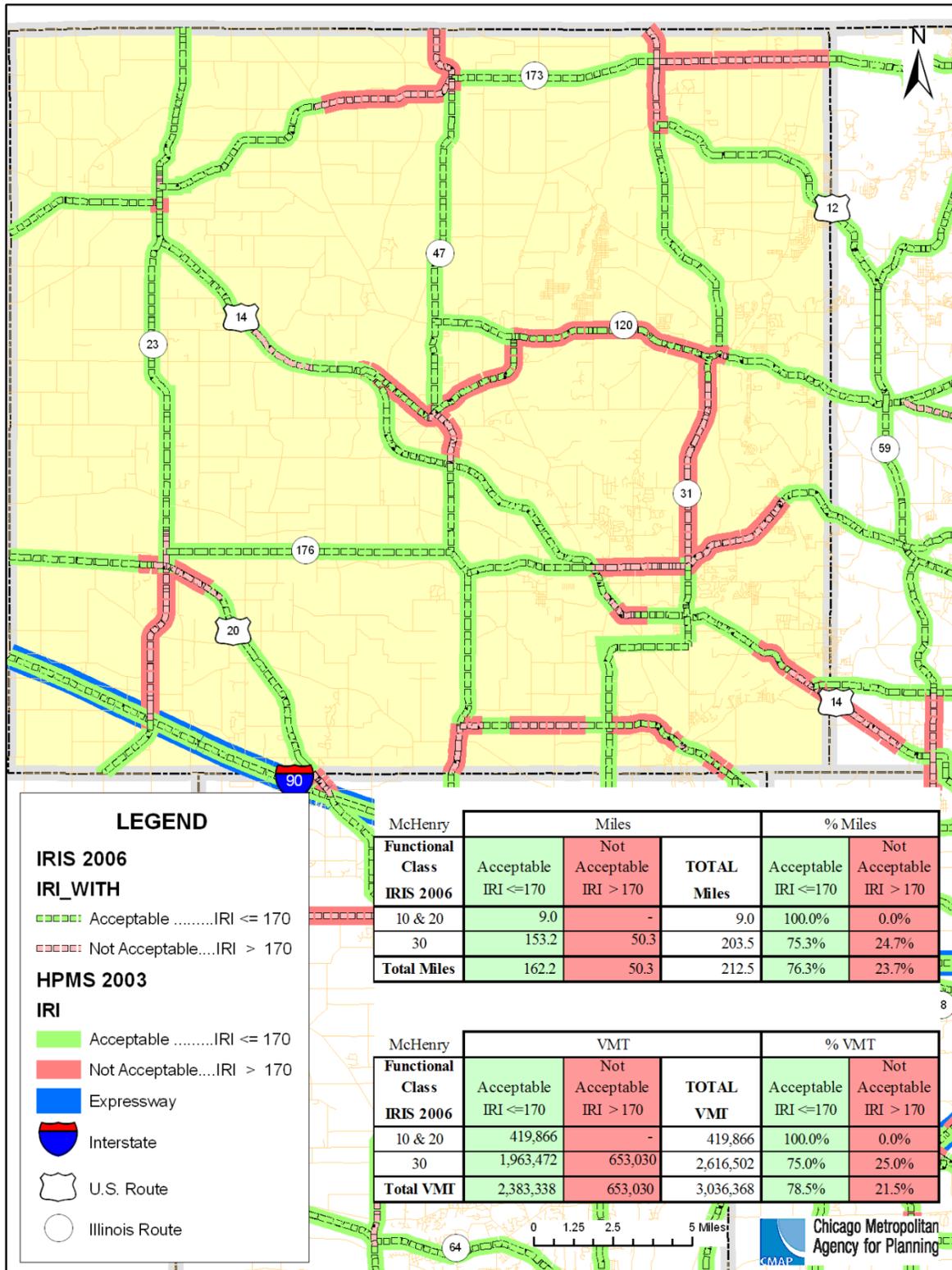


Exhibit A2: Lake County Ride Quality for Expressways & Primary Arterials

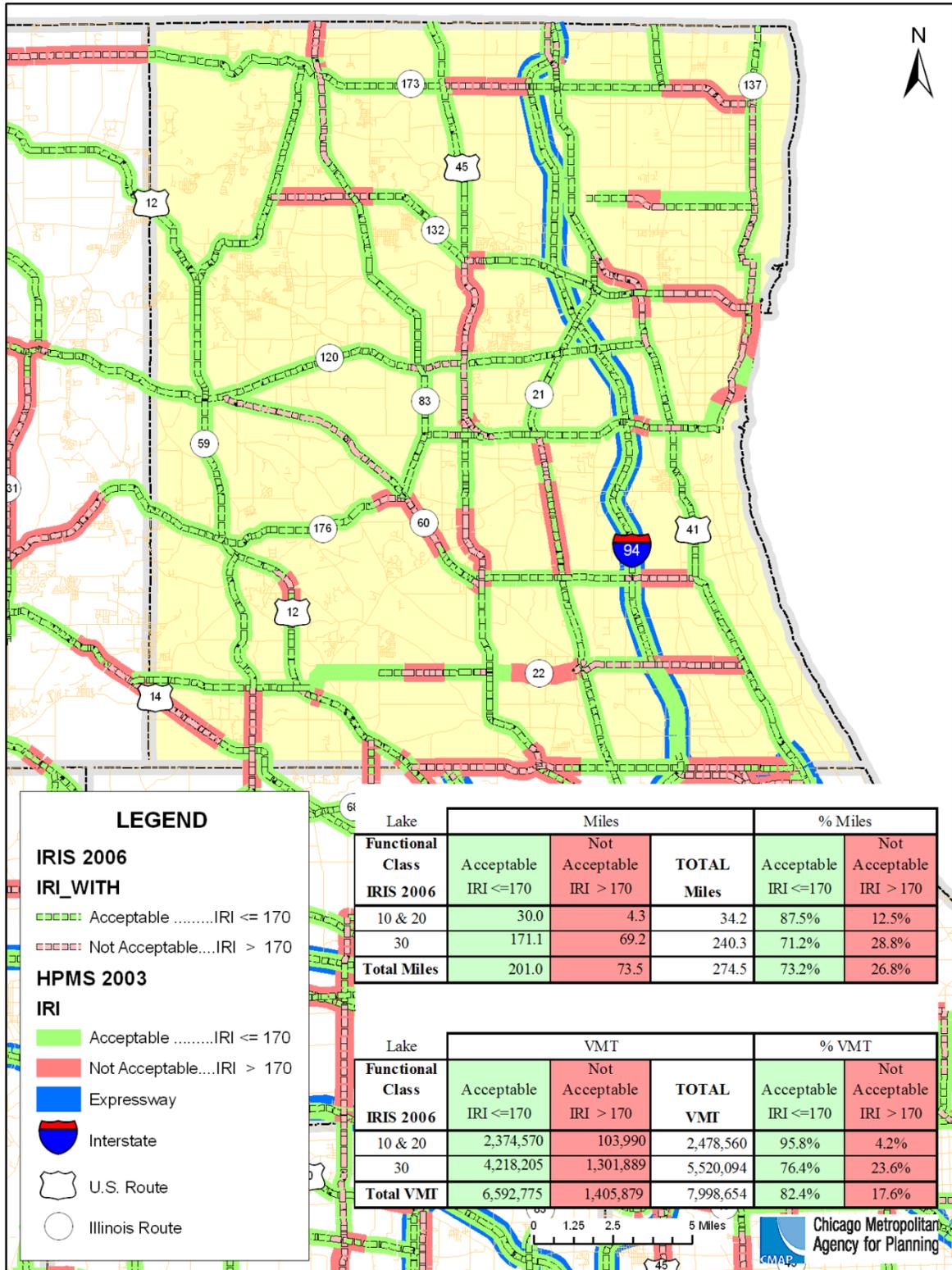


Exhibit A3: Kane County Ride Quality for Expressways & Primary Arterials

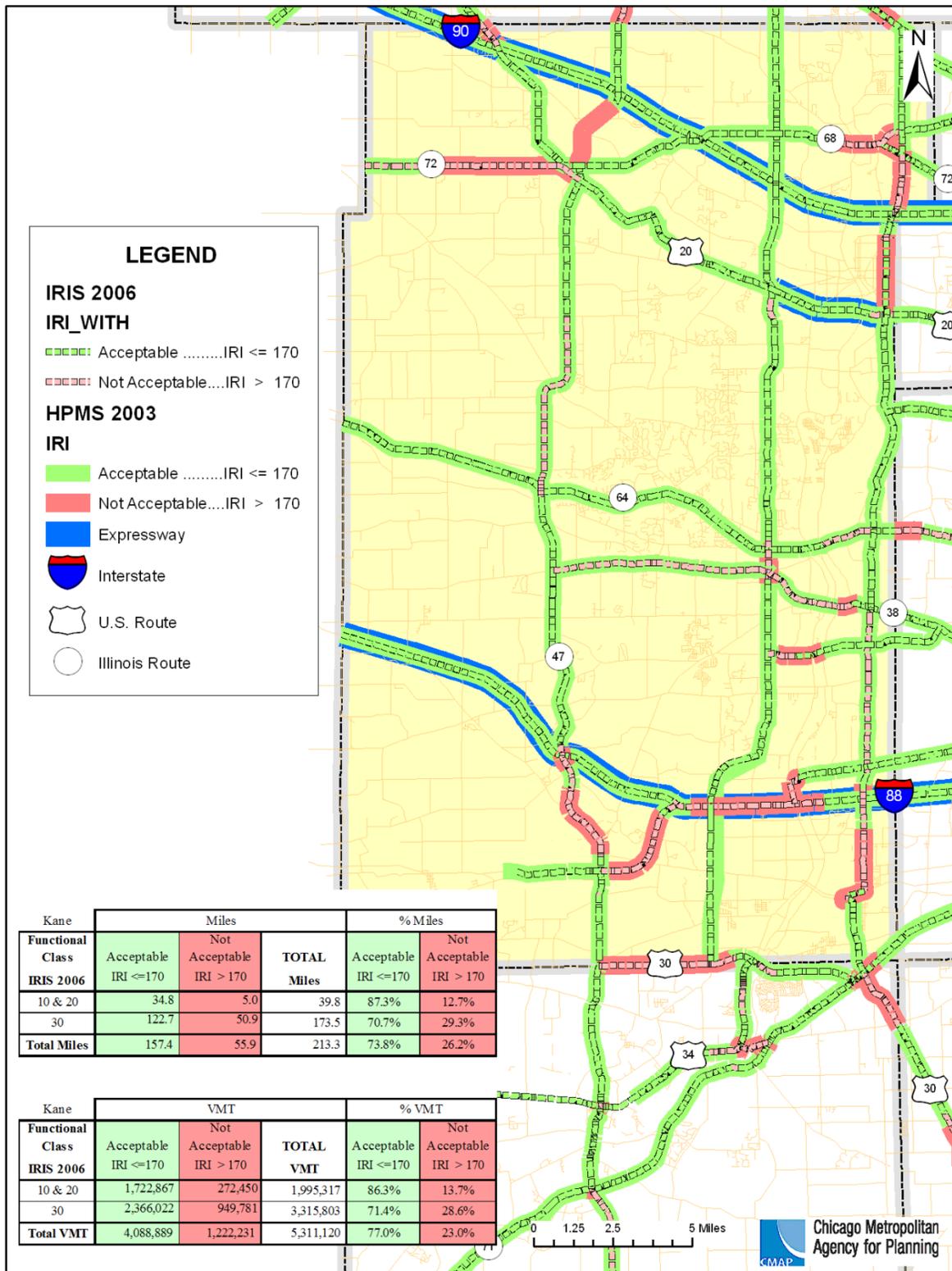


Exhibit A4: DuPage County Ride Quality for Expressways & Primary Arterials

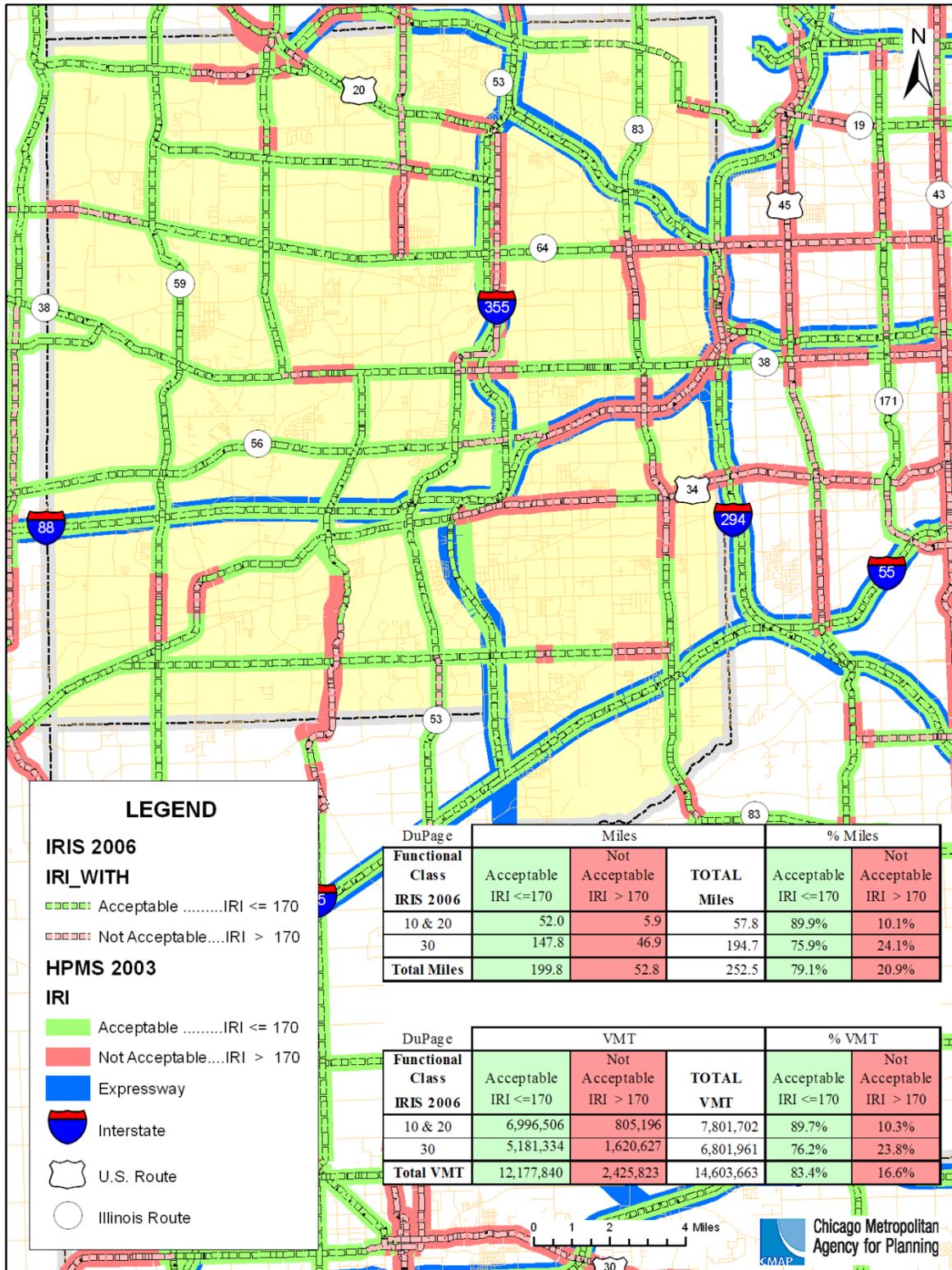
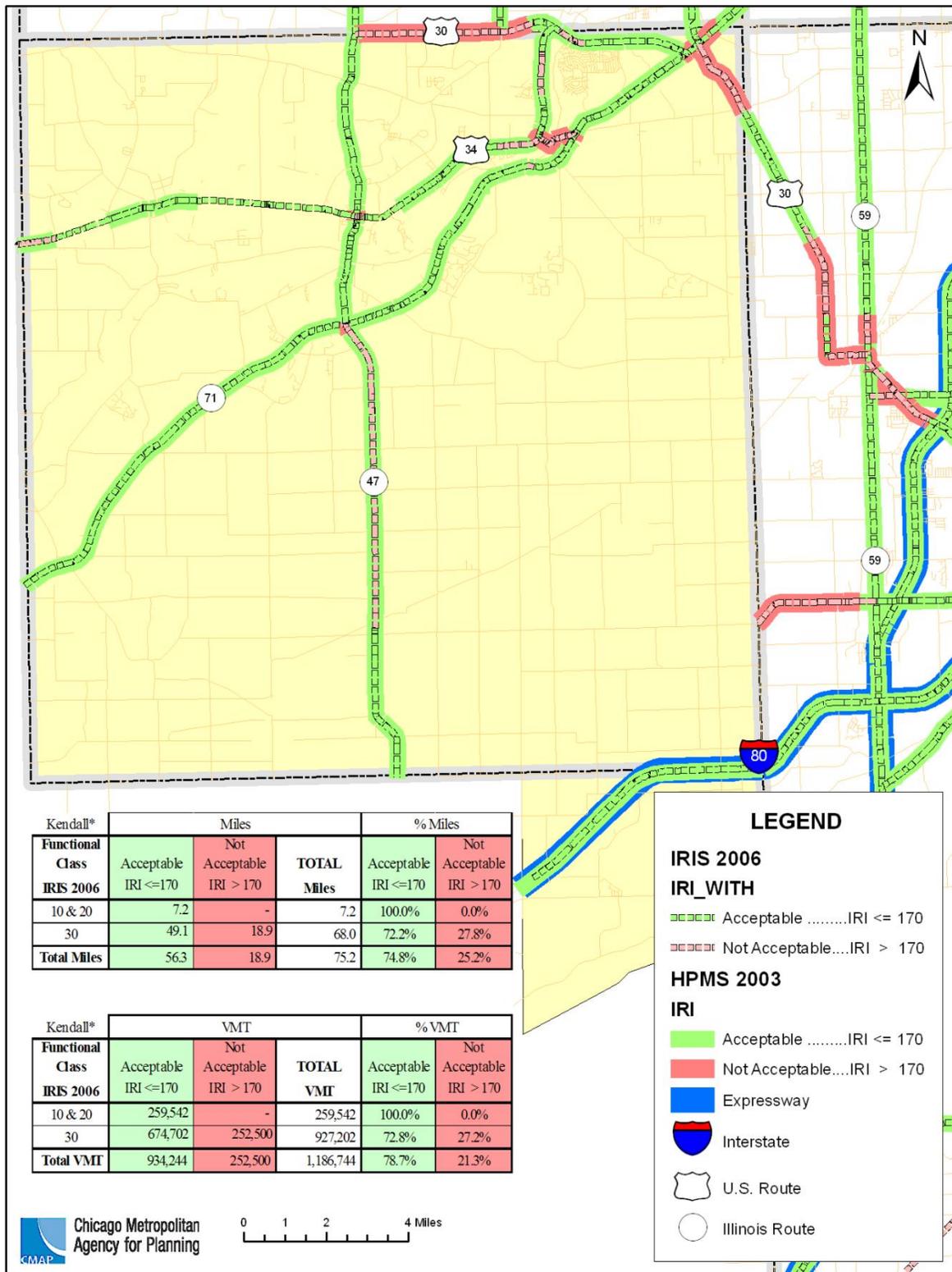


Exhibit A5: Kendall County Ride Quality for Expressways & Primary Arterials



Kendall* Functional Class IRIS 2006	Miles			% Miles	
	Acceptable IRI <=170	Not Acceptable IRI > 170	TOTAL Miles	Acceptable IRI <=170	Not Acceptable IRI > 170
10 & 20	7.2	-	7.2	100.0%	0.0%
30	49.1	18.9	68.0	72.2%	27.8%
Total Miles	56.3	18.9	75.2	74.8%	25.2%

Kendall* Functional Class IRIS 2006	VMT			% VMT	
	Acceptable IRI <=170	Not Acceptable IRI > 170	TOTAL VMT	Acceptable IRI <=170	Not Acceptable IRI > 170
10 & 20	259,542	-	259,542	100.0%	0.0%
30	674,702	252,500	927,202	72.8%	27.2%
Total VMT	934,244	252,500	1,186,744	78.7%	21.3%

Exhibit A6: Will County Ride Quality for Expressways & Primary Arterial

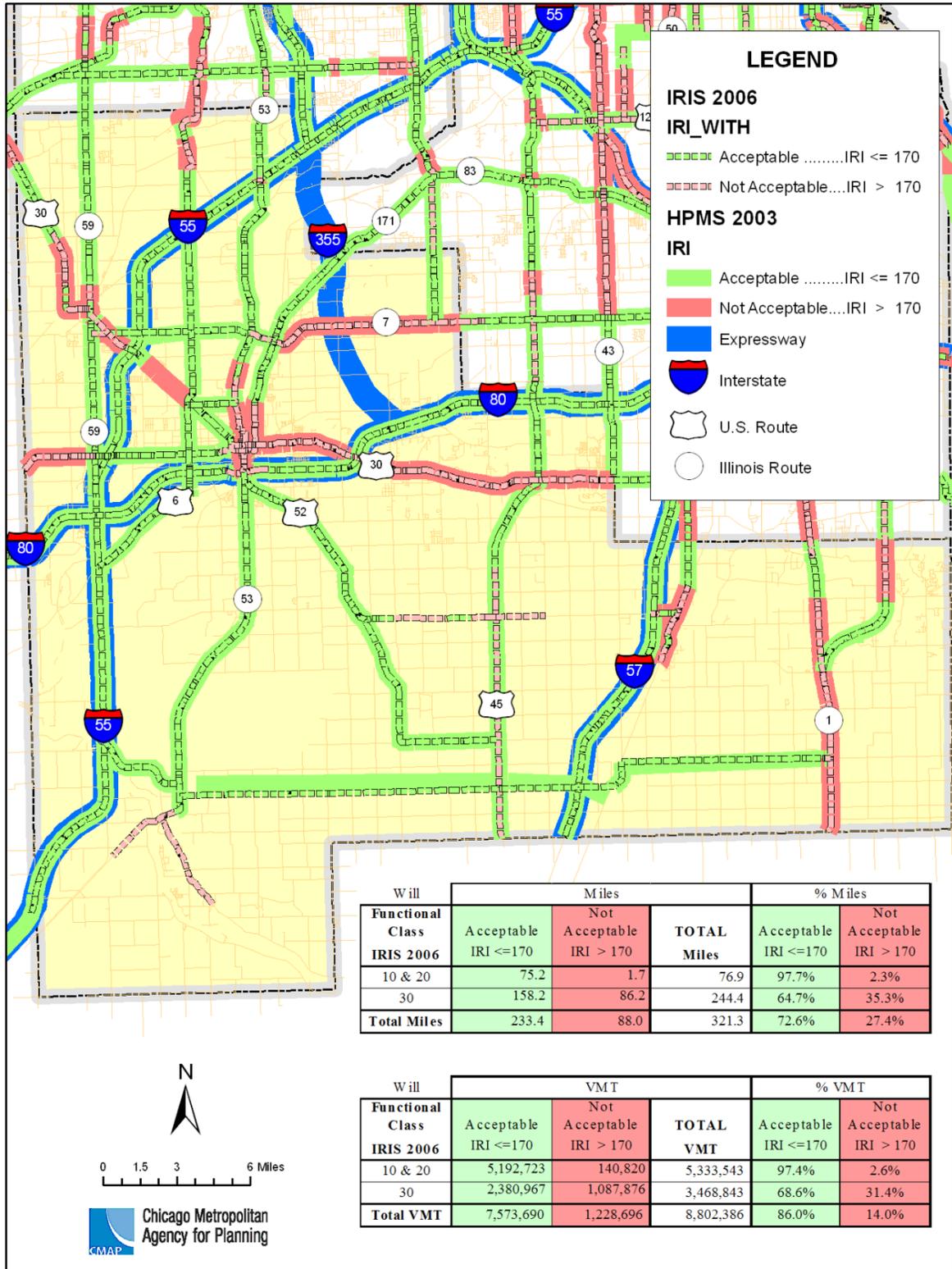


Exhibit A7: Cook County Ride Quality for Expressways & Primary Arterials

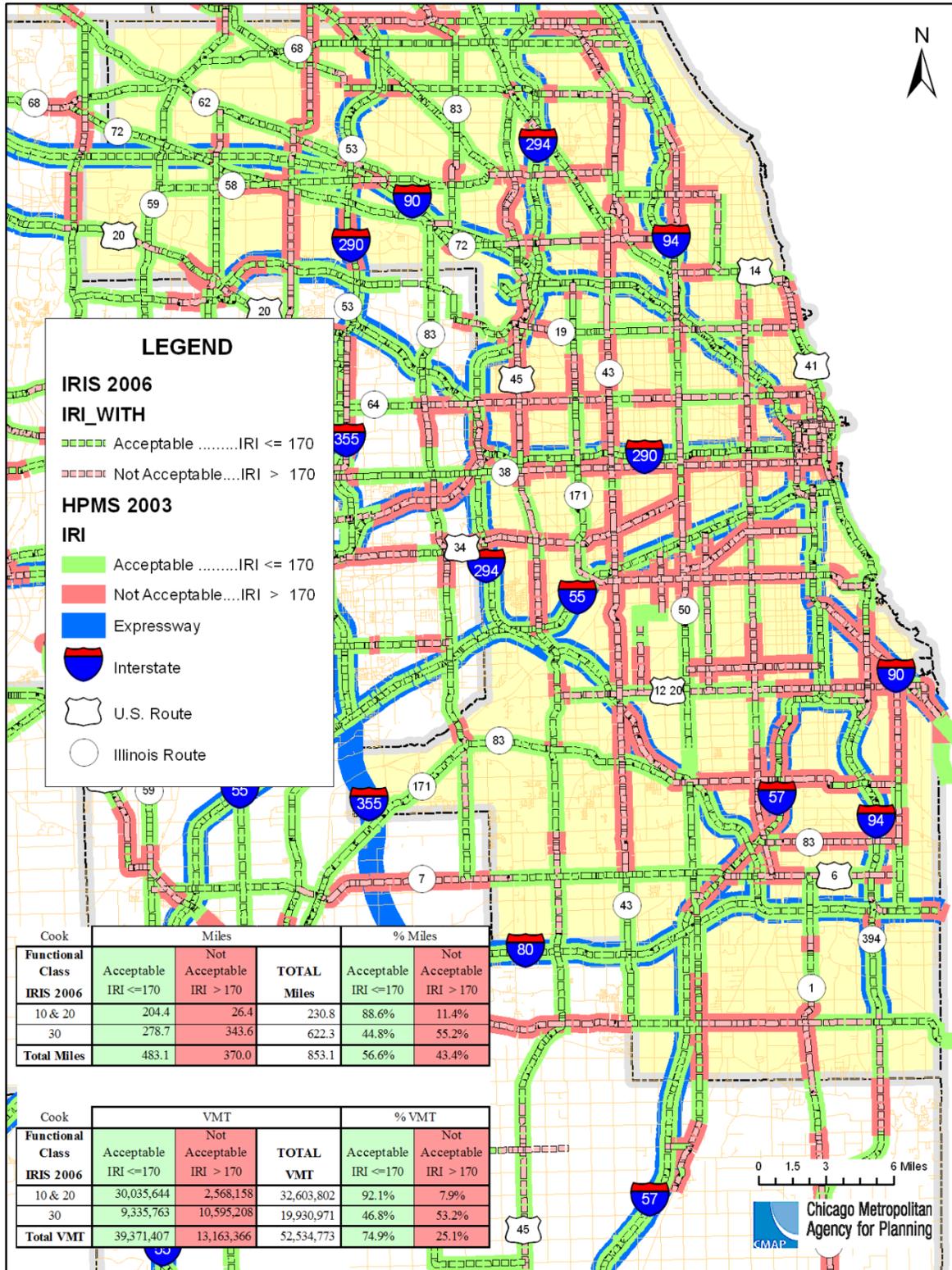
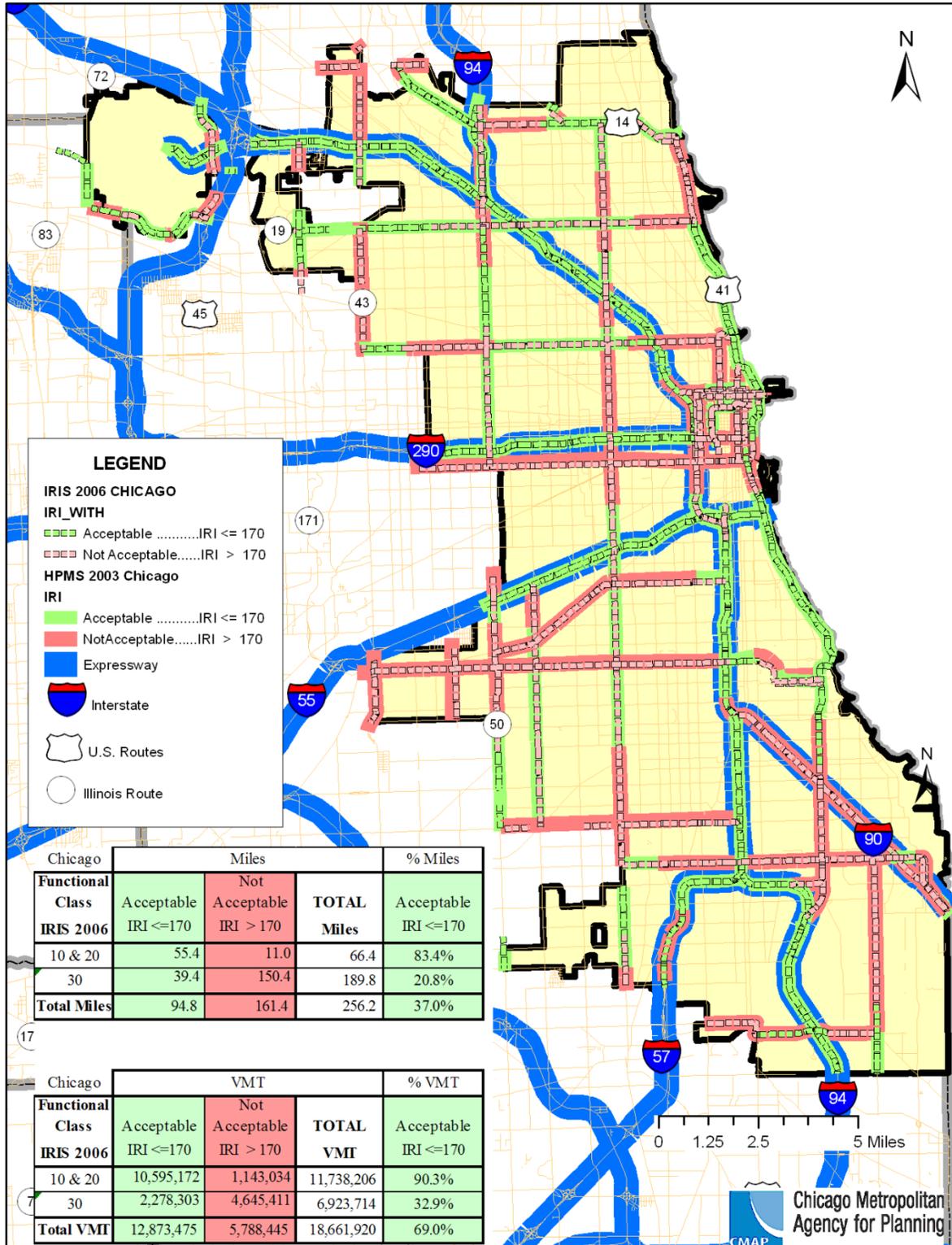


Exhibit A8: City of Chicago Ride Quality for Expressways & Primary Arterials



Appendix B

IRIS and IRI Background Information

Why is Roadway Information Collected

IRIS roadway information is collected for two primary reasons - to qualify for funding and to prioritize highway rehabilitation needs. Funding qualification is used to maximize the amount of money available to highway agencies. This is accomplished through several processes, most visible of which are the Highway Performance Monitoring System (HPMS) and Motor Fuel Tax (MFT). However, other lower profile specialized funding processes, such as Highway Safety Projects, also rely on IRIS.

To develop the most effective highway maintenance program possible, IDOT anticipates and prioritizes rehabilitation needs. Needed improvements are projected using information from IRIS, for example Surface Type, AADT and CRS Rating, in combination with other information. These projections are prioritized and included with funding and manpower restrictions to determine which roadway rehabilitation projects will be undertaken.

The IRIS manual can be downloaded from the IDOT web site www.dot.state.il.us under the "Doing Business" selection. The manual is also available as an IDOT electronic pdf document found within the Inside IDOT Intranet.

Source: Illinois Highway Information System :Roadway Information & Procedure Manual, July 1, 2001

Appendix E: Measuring Pavement Roughness **Introduction**

In order to provide a measure of pavement surface condition that has nationwide consistency and comparability and is as realistic and practical as possible, a uniform, calibrated roughness measurement for paved roadways is required by the HPMS.

Roughness is defined in accordance with ASTM E867 as "The deviation of a surface from a true planar surface with characteristic dimensions that affect vehicle dynamics and ride quality." After a detailed study of various methodologies and road profiling statistics, the International Roughness Index (IRI) was chosen as the HPMS standard reference roughness index. The summary numeric (HPMS data reporting unit) is the IRI in meters/kilometer (inches/mile). The primary advantages of the IRI are:

1. It is a time-stable, reproducible mathematical processing of the known profile.
2. It is broadly representative of the effects of roughness on vehicle response and user's perception over the range of wavelengths of interest, and is thus relevant to the definition of roughness.
3. It is a zero-origin scale consistent with the roughness definition.
4. It is compatible with profile measuring equipment available in the U.S. market.
5. It is independent of section length and amenable to simple averaging.
6. It is consistent with established international standards and able to be related to other roughness measures.

HPMS Roughness Measurement Procedure

The reference method for obtaining IRI data for the HPMS can be found in the AASHTO Standard Practice for Determination of International Roughness Index for Quantifying Roughness of Pavements, AASHTO PP 37-04. This Standard Practice calls for the use of a longitudinal profile measured in accordance with ASTM E-950 as a basis for estimating IRI. AASHTO PP 37-04 is reproduced in this appendix with the written consent of AASHTO. Roughness is reported for HPMS in IRI units of either m/km or in/mi (1 m/km = 63.36 in/mi).

Roughness data should be reported in IRI units for all sections in accordance with Table IV-1 in Chapter IV. The lower functional systems (rural and urban collector and urban minor arterial) have been placed in the "recommended" category since there are situations where it may not be possible to obtain meaningful roughness measurements with profiling equipment.

Source: HPMS Field Manual Appendix E <http://www.fhwa.dot.gov/ohim/hpmsmanl/appe.cfm>